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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/751,568	01/05/2004	David Stevenson Spain JR.	465-010US	3575

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EXAMINER

SHEDRICK, CHARLES TERRELL

ART UNIT	PAPER NUMBER
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2687

DATE MAILED: 09/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/751,568

Applicant(s)

SPAIN ET AL.

Examiner

Charles Shedrick

Art Unit

2687

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 1/5/2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims **1-5,8-13,16,17, 20-26,29-35, and 37-39** are rejected under 35 U.S.C. 102(b) as being anticipated by **Dupray US Patent # 6,249, 252 B1**.

Consider **claim 1**, Dupray clearly show and disclose a database (**abstract, column 50 lines 50 –67, column 35-column 36 line 27**) comprising: a signal-strength value for a first signal for each of a plurality of locations (**column 21 –column 23 line 5, column 25-column 26 line 48, column 38 lines 10-12, column 48 lines 20-22**); and a geometry-of-arrival value for a second signal for each of said plurality of locations (**abstract, column 23 lines 15 –47, column 37 – column 38 line 18, column 39 lines 25 –50, column 47 – column 48 line 56, column 49 – column 50 line 16, column 67-column 70**).

Consider **claim 2** and as applied to **claim 1** above, Dupray clearly show and disclose a database (**abstract, column 50 lines 50 –67, column 35-column 36 line 27**) wherein said geometry-of-arrival value is an angle-of-arrival (**abstract, column 23 lines 15 –47, column 37 – column 38 line 18, column 39 lines 25 –50, column 47 – column 48 line 56, column 49 – column 50 line 16, column 67-column 70**).

Consider **claim 3** and as applied to **claim 1** above, Dupray clearly show and disclose a database (**abstract, column 50 lines 50 –67, column 35-column 36 line 27**) wherein said

Art Unit: 2687

geometry-of-arrival value is a time-of-arrival (**abstract, column 23 lines 15 –47, column 37 – column 38 line 18, column 39 lines 25 –50, column 47 – column 48 line 56, column 49 – column 50 line 16, column 67-column 70**).

Consider **claim 4** and as applied to **claim 1** above, Dupray clearly show and disclose a database (**abstract, column 50 lines 50 –67, column 35-column 36 line 27**) wherein said geometry-of-arrival value is a time-difference-of-arrival (**abstract, column 23 lines 15 –47, column 37 – column 38 line 18, column 39 lines 25 –50, column 47 – column 48 line 56, column 49 –column 50 line 16, column 67-column 70**).

Consider **claim 5** and as applied to **claim 1** above, Dupray clearly show and disclose a database (**abstract, column 50 lines 50 –67, column 35-column 36 line 27**) wherein said second signal is transmitted by an Earth satellite (**abstract, column 23 lines 46- column 25 line 34, column 39 lines 25-50, column 50 lines 50-64**).

Consider **claim 8** and as applied to **claim 1** above, Dupray clearly show and disclose a database (**abstract, column 50 lines 50 –67, column 35-column 36 line 27**) further comprising a signal-strength value for a third signal at each of said plurality of locations (**column 21 – column 23 line 5, column 25-column 26 line 48, column 38 lines 10-12, column 48 lines 20-22**).

Consider **claim 9** and as applied to **claim 1** above, Dupray clearly show and disclose a database (**abstract, column 50 lines 50 –67, column 35-column 36 line 27**) further comprising a geometry-of-arrival value for a third signal at each of said plurality of locations (**abstract, column 23 lines 15 –47, column 37 – column 38 line 18, column 39 lines 25 –50, column 47 – column 48 line 56, column 49 –column 50 line 16, column 67-column 70**).

Consider **claim 10**, Dupray clearly show and disclose a database (**abstract, column 50 lines 50 –67, column 35-column 36 line 27**) comprising: a signal-strength value for a first signal for each of a plurality of locations (**column 21 –column 23 line 5, column 25-column 26 line 48, column 38 lines 10-12, column 48 lines 20-22**) ; and a geometry-of-arrival value for a second signal as transmitted from each of said plurality of locations (**abstract, column 23 lines 15 –47, column 37 – column 38 line 18, column 39 lines 25 –50, column 47 – column 48 line 56, column 49 –column 50 line 16, column 67-column 70**).

Consider **claim 11** and as applied to **claim 10** above, Dupray clearly show and disclose a database (**abstract, column 50 lines 50 –67, column 35-column 36 line 27**) wherein said geometry-of-arrival value is an angle-of-arrival (**abstract, column 23 lines 15 –47, column 37 – column 38 line 18, column 39 lines 25 –50, column 47 – column 48 line 56, column 49 – column 50 line 16, column 67-column 70**).

Consider **claim 12** and as applied to **claim 10** above, Dupray clearly show and disclose a database (**abstract, column 50 lines 50 –67, column 35-column 36 line 27**) wherein said geometry-of-arrival value is a time-of-arrival (**abstract, column 23 lines 15 –47, column 37 – column 38 line 18, column 39 lines 25 –50, column 47 – column 48 line 56, column 49 – column 50 line 16, column 67-column 70**).

Consider **claim 13** and as applied to **claim 10** above, Dupray clearly show and disclose a database (**abstract, column 50 lines 50 –67, column 35-column 36 line 27**) wherein said geometry-of-arrival value is a time-difference-of-arrival (**abstract, column 23 lines 15 –47, column 37 – column 38 line 18, column 39 lines 25 –50, column 47 – column 48 line 56,**

column 49 –column 50 line 16, column 67-column 70).

Consider **claim 16** and as applied to **claim 10** above, Dupray clearly show and disclose a database (**abstract, column 50 lines 50 –67, column 35-column 36 line 27**) further comprising a signal-strength value for a third signal at each of said plurality of locations (**column 21 –column 23 line 5, column 25-column 26 line 48, column 38 lines 10-12, column 48 lines 20-22**).

Consider **claim 17**, Dupray clearly show and disclose a method comprising: (a) receiving a signal-strength value for a first signal at a plurality of locations (**column 21 –column 23 line 5, column 25-column 26 line 48, column 38 lines 10-12, column 48 lines 20-22**); (b) receiving a geometry-of-arrival value for a second signal at said plurality of locations (**abstract, column 23 lines 15 –47, column 37 – column 38 line 18, column 39 lines 25 –50, column 47 – column 48 line 56, column 49 –column 50 line 16, column 67-column 70**); (c) storing said signal-strength values in a database (**abstract, column 50 lines 50 –67, column 35-column 36 line 27**); and. (d) storing said geometry-of-arrival values in said database (**abstract, column 50 lines 50 –67, column 35-column 36 line 27**).

Consider **claim 20** and as applied to **claim 17** above, Dupray clearly show and disclose a database (**abstract, column 50 lines 50 –67, column 35-column 36 line 27**) wherein said geometry-of-arrival value is an angle-of-arrival (**abstract, column 23 lines 15 –47, column 37 – column 38 line 18, column 39 lines 25 –50, column 47 – column 48 line 56, column 49 – column 50 line 16, column 67-column 70**).

Consider **claim 21** and as applied to **claim 17** above, Dupray clearly show and disclose a database (**abstract, column 50 lines 50 –67, column 35-column 36 line 27**) wherein said

Art Unit: 2687

geometry-of-arrival value is a time-of-arrival (**abstract, column 23 lines 15 –47, column 37 – column 38 line 18, column 39 lines 25 –50, column 47 – column 48 line 56, column 49 – column 50 line 16, column 67-column 70**).

Consider **claim 22** and as applied to **claim 17** above, Dupray clearly show and disclose a database (**abstract, column 50 lines 50 –67, column 35-column 36 line 27**) wherein said geometry-of-arrival value is a time-difference-of-arrival (**abstract, column 23 lines 15 –47, column 37 – column 38 line 18, column 39 lines 25 –50, column 47 – column 48 line 56, column 49 –column 50 line 16, column 67-column 70**).

Consider **claim 23** and as applied to **claim 17** above, Dupray clearly show and disclose a database (**abstract, column 50 lines 50 –67, column 35-column 36 line 27**) wherein said second signal is transmitted by an Earth satellite (**abstract, column 23 lines 46- column 25 line 34, column 39 lines 25-50, column 50 lines 50-64**).

Consider **claim 24** and as applied to **claim 17** above, Dupray clearly show and disclose a method further comprising: interpolating a signal-strength value for said first signal at a location (**column 3 lines 34-52, column 27, column 28**); and storing said signal-strength value in said database (**abstract, column 50 lines 50 –67, column 35-column 36 line 27**).

Consider **claim 25** and as applied to **claim 17** above, Dupray clearly show and disclose a method further comprising: interpolating a geometry-of-arrival value for said second signal at a location (**column 3 lines 34-52, column 27, column 28**); and storing said geometry-of-arrival value in said database (**abstract, column 50 lines 50 –67, column 35-column 36 line 27**).

Consider **claim 26**, Dupray clearly show and disclose a method comprising: (a) receiving a signal-strength value for a first signal at a plurality of locations (**column 21 –column 23 line 5,**

Art Unit: 2687

column 25-column 26 line 48, column 38 lines 10-12, column 48 lines 20-22); (b) receiving a geometry-of-arrival value for a second signal as transmitted from said plurality of locations (abstract, column 23 lines 15 –47, column 37 – column 38 line 18, column 39 lines 25 –50, column 47 – column 48 line 56, column 49 –column 50 line 16, column 67-column 70); (c) storing said signal-strength values in a database(abstract, column 50 lines 50 –67, column 35-column 36 line 27); and. (d) storing said geometry-of-arrival values in said database(abstract, column 50 lines 50 –67, column 35-column 36 line 27).

Consider **claim 29** and as applied to **claim 26** above, Dupray clearly show and disclose a database (**abstract, column 50 lines 50 –67, column 35-column 36 line 27**) wherein said geometry-of-arrival value is an angle-of-arrival (**abstract, column 23 lines 15 –47, column 37 – column 38 line 18, column 39 lines 25 –50, column 47 – column 48 line 56, column 49 – column 50 line 16, column 67-column 70**).

Consider **claim 30** and as applied to **claim 26** above, Dupray clearly show and disclose a database (**abstract, column 50 lines 50 –67, column 35-column 36 line 27**) wherein said geometry-of-arrival value is a time-of-arrival (**abstract, column 23 lines 15 –47, column 37 – column 38 line 18, column 39 lines 25 –50, column 47 – column 48 line 56, column 49 – column 50 line 16, column 67-column 70**).

Consider **claim 31** and as applied to **claim 26** above, Dupray clearly show and disclose a database (**abstract, column 50 lines 50 –67, column 35-column 36 line 27**) wherein said geometry-of-arrival value is a time-difference-of-arrival (**abstract, column 23 lines 15 –47, column 37 – column 38 line 18, column 39 lines 25 –50, column 47 – column 48 line 56, column 49 –column 50 line 16, column 67-column 70**).

Consider **claim 32** and as applied to **claim 26 above**, Dupray clearly show and disclose a method further comprising: interpolating a signal-strength value for said first signal at a location (**column 3 lines 34-52, column 27, column 28**); and storing said signal-strength value in said database (**abstract, column 50 lines 50 –67, column 35-column 36 line 27**).

Consider **claim 33** and as applied to **claim 26 above**, Dupray clearly show and disclose a method further comprising: interpolating a geometry-of-arrival value for said second signal at a location (**column 3 lines 34-52, column 27, column 28**); and storing said geometry-of-arrival value in said database (**abstract, column 50 lines 50 –67, column 35-column 36 line 27**).

Consider **claim 34** Dupray clearly discloses a method comprising: (a) receiving a signal-strength value for a first signal (**column 21 –column 23 line 5, column 25-column 26 line 48, column 38 lines 10-12, column 48 lines 20-22**); (b) receiving a geometry-of-arrival value for a second signal (**abstract, column 23 lines 15 –47, column 37 – column 38 line 18, column 39 lines 25 –50, column 47 – column 48 line 56, column 49 –column 50 line 16, column 67-column 70**); (c) selecting one of a plurality of locations based on said signal-strength value, said geometry-of-arrival value, and a database that associates locations with signal-strength values and geometry-of-arrival values(**abstract, column 50 lines 50 –67, column 35-column 36 line 27**).

Consider **claim 35** and as applied to **claim 34 above**, Dupray clearly show and disclose a method wherein (c) comprises finding the location in said database with signal strength and geometry-of-arrival values closest to the signal strength and geometry-of-arrival values received in (a) and (b) (i.e., location estimates) (**abstract, column 50 lines 50 –67, column 35-column 36 line 27**).

Consider **claim 37 and as applied to claim 34 above**, Dupray clearly show and disclose a database (**abstract, column 50 lines 50 –67, column 35-column 36 line 27**) wherein said geometry-of-arrival value is an angle-of-arrival (**abstract, column 23 lines 15 –47, column 37 – column 38 line 18, column 39 lines 25 –50, column 47 – column 48 line 56, column 49 – column 50 line 16, column 67-column 70**).

Consider **claim 38 and as applied to claim 34 above**, Dupray clearly show and disclose a database (**abstract, column 50 lines 50 –67, column 35-column 36 line 27**) wherein said geometry-of-arrival value is a time-of-arrival (**abstract, column 23 lines 15 –47, column 37 – column 38 line 18, column 39 lines 25 –50, column 47 – column 48 line 56, column 49 – column 50 line 16, column 67-column 70**).

Consider **claim 39 and as applied to claim 34 above**, Dupray clearly show and disclose a database (**abstract, column 50 lines 50 –67, column 35-column 36 line 27**) wherein said geometry-of-arrival value is a time-difference-of-arrival (**abstract, column 23 lines 15 –47, column 37 – column 38 line 18, column 39 lines 25 –50, column 47 – column 48 line 56, column 49 –column 50 line 16, column 67-column 70**).

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

Art Unit: 2687

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims **6,7, 14,15,18,19,27,28** rejected under 35 U.S.C. 103(a) as being unpatentable over **Dupray US Patent # 6,249, 252 B1 in view of Malloy et al. U.S. Patent # 5,943,668.**

Consider **claims 6,14,18, and 27** and as applied to **claims 1,10, 17, and 26** above, Dupray clearly discloses the claimed invention including a database (**abstract, column 50 lines 50 –67, column 35-column 36 line 27**) that stores at least one of: the coordinates of the location (**column 35 line 55-67, column 70**); the signal-strength value for the location (**column 21 – column 23 line 5, column 25-column 26 line 48, column 38 lines 10-12, column 48 lines 20-22**); and the geometry-of-arrival value for the location (**abstract, column 23 lines 15 –47, column 37 – column 38 line 18, column 39 lines 25 –50, column 47 – column 48 line 56, column 49 –column 50 line 16, column 67-column 70**).

However, Dupray does not clearly disclose wherein said database is a relational database, and wherein each of said plurality of locations is associated with a respective row in a table.

In the same field of endeavor, Malloy et al. clearly show and disclose wherein a database is a relational database, and wherein information (i.e., location info) is associated with a respective row in a table (**abstract, column 1 lines 35-40, column 2 line lines 57-64, column 3 lines 13-16, column 8, column 11 lines 39 –61**).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the database of Dupray into a relational database as taught by Malloy et al. for the purpose of organizing location information more efficiently.

Consider **claims 7,15,19, and 28** and as applied to **claims 1,10, 17, and 26 above**, Dupray clearly discloses the claimed invention except wherein values are stored in a first multi-dimensional array, and wherein said geometry-of-arrival values are stored in a second multi-dimensional array, and wherein said first multi-dimensional array and said second multi-dimensional array are indexed based on said plurality of locations.

In the same field of endeavor Malloy et al. clearly show and disclose wherein values are stored in a first multi-dimensional array, and a second multi-dimensional array, and wherein said first multi-dimensional array and said second multi-dimensional array (**abstract, column 6 line 10 –25**) are indexed (**column 10 lines 20-57**).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method of Dupray for storing values to include multi dimensional arrays as taught by Malloy et al. for the purposes of organizing and looking and searching location information more efficiently.

Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Dupray US Patent # 6,249, 252 B1 in view of Goren et al. U.S. Patent Pub. No. 2004/0022214 A1**

Consider **claim 36** and as applied to **claim 35** above, Dupray clearly discloses the claimed invention except wherein (c) is based on a Euclidean norm.

However in the same field of endeavor, Goren et al. clearly show and disclose a Euclidean norm based derivation (**paragraph 0037**).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Dupray's method of finding the location to include the Euclidean norm as taught by Goren et al. for the purpose of improved location calculation.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Reudink et al. U.S. Patent 6,236,849 B1, Dent U.S. Patent # 5,404,376, and Cong et al. IEEE Transactions on wireless communications, vol. 1, no. 3, July 2002.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Shedrick whose telephone number is (571)-272-8621.


The examiner can normally be reached on Monday thru Friday 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kincaid Lester can be reached on (571)-272-7922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2687

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Charles Shedrick
AU 2687
September 13, 2005


RAFAEL PEREZ-GUTIERREZ
PRIMARY EXAMINER
9/19/05